

Appl. No. : 10/672,469  
Filed : September 26, 2003

REMARKS

In the Office Action, the examiner rejected Claims 1, 11 and 12 under 35 U.S.C. 102(b) as being anticipated by Okamoto et al. (cited reference U.S. Patent No. 5,557,314). Accordingly, the applicant has amended the claims to more clearly differentiate the present invention from the technology disclosed by the cited Okamoto et al. reference. In the amendment, the applicant has canceled Claims 1, 4, 11 and 12.

One of the essential features of the present invention resides in the fact that (1) the control signal storage section is provided for storing a value of the deflection control signal output from the deflection control section, and (2) the control signal storage section connects the plurality of deflectors in series when self-diagnosing electrical connections in the electron beam exposure apparatus by scanning the deflection control signals. As a result, when testing the integrity of the electrical connections in the electron beam exposure apparatus (or deflection apparatus), a scan test can be performed prior to the operation of the electron beam deflection on the wafer.

In the cited Okamoto et al. reference, however, there is no such a storage section for connecting the plurality of deflectors in series and scanning the stored deflection control signal through the series connected deflectors for self-diagnosing. Although Fig. 17 of Okamoto et al. includes memories 75 and 78, these memories are used for storing the secondary electron data and the mask data

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which are totally unrelated to the scan test of the electrical connections in the apparatus. The data storage unit 22 or the buffer memory 23 of Okamoto et al. does not store the deflection control signal either.

Further, the cited Okamoto et al. reference is completely silent about testing the electrical connections in the electron beam exposure apparatus by the scanning method. Since the essential elements of the present invention are not shown or suggested by the cited Okamoto et al. reference as discussed above, the rejection under 35 U.S.C. 102(b) is not applicable to the present invention.

In the Office Action, the examiner rejected Claims 2, 4-6, 9-10, and 13-14 under 35 U.S. C. 103(a) as being obvious over the cited Okamoto et al. reference. The examiner rejected Claims 7-8 under 35 U.S. C. 103(a) as being obvious over the cited Okamoto et al. reference in view of Yasuda (cited reference U.S. Patent No. 4,145,597). The examiner rejected Claim 3 under 35 U.S. C. 103(a) as being obvious over the cited Okamoto et al. reference in view of Hamaguchi et al. (cited reference U.S. Patent No. 6,703,624). As noted above, Claims 1, 4, 11 and 12 have been canceled.

All of the obviousness rejections noted above are based on the teachings in the cited Okamoto et al. reference. As discussed above with respect to the rejection under 35 U.S.C. 102(b), the cited Okamoto et al. reference does not show the essential features of the present invention. Therefore, it is not possible to make

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the present inventions defined in the dependent claims by combining the technology shown in the cited Okamoto et al. reference with technologies shown in any other references. In other words, the present inventions in the dependent are not obvious over the above listed cited references taken singly or in combination.


As discussed above, the present invention is fully distinguishable from the cited Okamoto et al. reference, and thus, the rejection under 35 U.S.C. 102(b) is no longer applicable to the present invention. Further, the present invention is not obvious over the cited references taken singly or in combination, and thus, the rejection under 35 U.S.C. 103(a) is no longer applicable to the present invention.

In view of the foregoing, the applicant believes that Claims 2-3, 5-10, and 13-14 are in condition for allowance, and accordingly, Applicant respectfully requests that the present application be allowed and passed to issue.

Respectfully submitted,

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